

Title (en)

AQUEOUS LUBRICANT FOR PLASTIC WORKING OF METALLIC MATERIAL AND METHOD FOR FORMING LUBRICANT FILM

Title (de)

WÄSSRIGER SCHMIERSTOFF ZUR PLASTISCHEN VERARBEITUNG METALLISCHER WERKSTOFFE UND VERFAHREN ZUR BILDUNG EINES SCHMIERFILMS

Title (fr)

LUBRIFIANT AQUEUX POUR LE TRAVAIL PLASTIQUE D'UN MATERIAU METALLIQUE ET PROCEDE D'ELABORATION D'UN FILM LUBRIFIANT

Publication

**EP 1319703 B1 20130410 (EN)**

Application

**EP 01925971 A 20010426**

Priority

- JP 0103640 W 20010426
- JP 2000237955 A 20000807

Abstract (en)

[origin: EP1319703A1] An aqueous lubricant for use in plastic working of a metallic material which comprises (A) a water soluble inorganic salt and (B) a wax, wherein the components are dissolved or dispersed in water, and wherein a solid concentration ratio (weight ratio) (B)/(A) is 0.3 SIMILAR 1.5. and a method for producing a lubricative film, characterized in that a lubricative film is produced by applying the aqueous lubricant, preferably in a dried weight of 0.5 SIMILAR 40g/m<2>, on the surface of a metallic material, providing no chemical conversion layer thereon, followed by drying. The aqueous lubricant preferably further comprises (C) a metal salt of a fatty acid in a solid concentration ratio (C)/(A) of 0.01 SIMILAR 0.4. The water soluble inorganic salt (A) is preferably selected from among a sulfate, a silicate, a borate, a molybdate and a tungstate. The wax is preferably a synthetic wax which is dispersed in water and has a melting point of 70 SIMILAR 150 DEG C. The metal salt of a fatty acid (C) is preferably obtained through reacting a saturated fatty acid having 12 SIMILAR 26 carbon atoms with a metal selected from among zinc, calcium, barium, aluminium, magnesium and lithium. The aqueous lubricant can be used for imparting excellent lubricity with ease to the surface of metal having no chemical conversion layer formed thereon. <IMAGE>

IPC 8 full level

**B21C 9/00** (2006.01); **B21C 9/02** (2006.01); **B21J 3/00** (2006.01); **C10M 111/00** (2006.01); **C10M 173/00** (2006.01); **C10M 173/02** (2006.01)

CPC (source: EP KR US)

**B21C 9/005** (2013.01 - EP US); **B21C 9/02** (2013.01 - EP US); **B21J 3/00** (2013.01 - EP US); **C10M 111/00** (2013.01 - EP US); **C10M 125/22** (2013.01 - EP US); **C10M 125/26** (2013.01 - EP US); **C10M 129/32** (2013.01 - EP US); **C10M 159/06** (2013.01 - EP KR US); **C10M 173/00** (2013.01 - EP US); **C10M 173/02** (2013.01 - EP US); **C10M 2201/065** (2013.01 - EP US); **C10M 2201/066** (2013.01 - EP US); **C10M 2201/08** (2013.01 - EP US); **C10M 2201/0803** (2013.01 - EP US); **C10M 2201/081** (2013.01 - EP US); **C10M 2201/082** (2013.01 - EP US); **C10M 2201/084** (2013.01 - EP US); **C10M 2201/087** (2013.01 - EP US); **C10M 2201/0873** (2013.01 - EP US); **C10M 2201/10** (2013.01 - EP US); **C10M 2201/102** (2013.01 - EP US); **C10M 2201/1023** (2013.01 - EP US); **C10M 2201/105** (2013.01 - EP US); **C10M 2205/14** (2013.01 - EP US); **C10M 2205/143** (2013.01 - EP US); **C10M 2205/16** (2013.01 - EP US); **C10M 2205/163** (2013.01 - EP US); **C10M 2205/17** (2013.01 - EP US); **C10M 2207/122** (2013.01 - EP US); **C10M 2207/125** (2013.01 - EP US); **C10M 2207/1253** (2013.01 - EP US); **C10M 2207/126** (2013.01 - EP US); **C10M 2207/129** (2013.01 - EP US); **C10N 2010/02** (2013.01 - EP US); **C10N 2010/04** (2013.01 - EP US); **C10N 2010/06** (2013.01 - EP US); **C10N 2040/24** (2013.01 - EP US); **C10N 2040/241** (2020.05 - EP US); **C10N 2040/242** (2020.05 - EP US); **C10N 2040/243** (2020.05 - EP US); **C10N 2040/244** (2020.05 - EP US); **C10N 2040/245** (2020.05 - EP US); **C10N 2040/246** (2020.05 - EP US); **C10N 2040/247** (2020.05 - EP US); **C10N 2050/01** (2020.05 - EP US); **C10N 2050/02** (2013.01 - EP US); **C10N 2070/00** (2013.01 - EP US)

Cited by

US9192973B1; EP3620502A1; WO2020053232A1; US11905489B2

Designated contracting state (EPC)

DE FR IT

DOCDB simple family (publication)

**EP 1319703 A1 20030618**; **EP 1319703 A4 20040811**; **EP 1319703 B1 20130410**; CA 2418965 A1 20030207; CA 2418965 C 20101005; CN 1208441 C 20050629; CN 1468293 A 20040114; JP 3984159 B2 20071003; KR 100621692 B1 20060908; KR 20030027001 A 20030403; MX PA03000791 A 20041101; TW 588108 B 20040521; US 2003130138 A1 20030710; US 7414012 B2 20080819; WO 0212420 A1 20020214

DOCDB simple family (application)

**EP 01925971 A 20010426**; CA 2418965 A 20010426; CN 01816962 A 20010426; JP 0103640 W 20010426; JP 2002517711 A 20010426; KR 20037001681 A 20030205; MX PA03000791 A 20010426; TW 90109850 A 20010425; US 36049203 A 20030207